COMPOSITION OF THE POLYSACCHARIDE FRACTIONS ISOLATED FROM THE FRUITS OF PEDALIUM MUREX (PEDALIACEAE)

N. Savitri Kumar, K.M. Swarna, S. Wimalasiri and B.M. Ratnayake Bandara
Dept. of Chemistry, University of Peradeniya.

Pedalium murex Linn. (Pedaliaceae) is an annual herb which occurs in India, Ceylon, tropical Africa and Indonesia. The leaves, stem and fruit are of medicinal use in Sri Lanka. The fruit is a demulcent, diuretic, anti-spasmodic and aphrodisiac.[1]

The fresh fruits were chopped and extracted sequentially with methanol and water. The water extract was dialysed, centrifuged and freeze dried. The moisture (32%), protein (17%) and carbohydrate (30%) contents of the crude polymeric material were determined. The native polysaccharide obtained after purification by the cetavlon method[2] contained rhamnose (1), arabinose (3), mannose (6), galactose (1) and glucose (2). The polysaccharide was passed through a column of Sephacryl S-400 and separated in to four fractions (I-IV) The sugar composition of the four fractions was determined by g.l.c. of the derived alditol acetates. The complex mixture of partially methylated alditol acetates obtained by methylation of fraction II was analysed by GC-MS. The following structural elements were found to be present : terminal rhamnose, 4-linked rhamnose, 3-linked rhamnose, terminal galactose, 3,4-linked rhamnose, 3-linked hexose, 6-linked hexose and 3,4-linked hexose.

(The authors thank: Prof. Bengt Lindberg, University of Stockholm for his help; the International Programme in the Chemical Sciences, Uppsala University, and the International Foundation for Science, Stockholm, for financial assistance. This work was supported by the Natural Resources, Energy and Science Authority of Sri Lanka.)

References:

Jayaweera, D.M.A. (1981) "Medicinal Plants used in Ceylon", Part 3, Colombo, National Science Council.

Scott, J.E. in Methods Carbohydr.Chem. (1965) 5:38 Ed. by R.L. Whistler, New York and London: Academic Press.